

WHAT IS CLAIMED IS:

1. A vent disc for a drinking container, which comprises:

5

a curved domed portion, said domed portion having a plurality of perforations extending therethrough, said plurality of perforations extending along radii that form the curvature of said domed portion, wherein said plurality of perforations have at least two different diameters through said domed portion.

10

2. A vent disc for a drinking container, which comprises:

15

a concavely curved domed central panel having a plurality of upwardly extending depressions therein;

20

a plurality of residuals of said central panel above said plurality of depressions; and

25

a plurality of perforations extending through said plurality of residuals,

30

wherein said plurality of depressions have center lines that are coincident with radii of curvature that form the concave curvature of said domed central panel, and

wherein said plurality of perforations extend along said center lines of said plurality of depressions.

3. The vent disc of claim 2, wherein the vent disc is made of a polymeric or thermoset material.

5 4. The vent disc of claim 3, wherein the material is selected from the group consisting essentially of a thermoplastic, elastomer, thermoset rubber, silicone and combinations thereof.

10 5. The vent disc of claim 2, wherein the vent disc has a hardness about 60 durometers.

15 6. The vent disc of claim 2, wherein said central panel has a thickness about 0.03 inches to about 0.10 inches.

20 7. The vent disc of claim 6, wherein said central panel has a thickness about 0.050 to about 0.060 inches.

8. The vent disc of claim 2, wherein a majority of said plurality of depressions each has a diameter of about 0.060 inches.

25 9. The vent disc of claim 2, wherein said plurality of depressions has a shape selected from the group consisting essentially of conical and cylindrical shapes.

30 10. The vent disc of claim 2, wherein a majority of each of said plurality of residuals has a thickness about 0.010 to about 0.090 inches.

11. The vent disc of claim 10, wherein each of

said majority of said plurality of residuals has a thickness is about 0.030 inches.

5 12. The vent disc of claim 2, wherein said plurality of perforations have a width about 0.040 to about 0.080 inches.

10 13. The vent disc of claim 12, wherein said width of said plurality of perforations is about 0.060 inches.

15 14. A method of forming a plurality of perforations in a concavely curved domed portion of a vent disc, which comprises:

forming the plurality of perforations along radii that form the concave curvature of the domed portion.

20 15. The method of claim 14, wherein the method includes forming a plurality of upwardly extending depressions in the undersurface of the domed portion, said depressions having centerlines that are coincident with radii of curvature that form the concave curvature of the domed portion.

25 16. A method of forming a plurality of perforations in a concavely curved domed portion of a vent disc, which comprises:

30 forming a plurality of upwardly extending depressions in the undersurface of the domed portion while leaving a residual of domed portion

above the depressions, said depressions being formed on centerlines coincident with radii that form the concave curvature of the domed portion; and

forming a plurality of perforations through said residual, said perforations being formed along said centerlines of said plurality of depressions.

17. Apparatus for forming a plurality of perforations in a concavely curved domed portion of a vent disc, which comprises:

a plurality of elongated means for piercing the domed portion of the vent disc to form the plurality of perforations, each of said plurality of piercing means having a longitudinal central axis;

means for mounting said plurality of piercing means so that their central axes are coincident with the radii of curvature that form the domed portion of the vent disc;

means for holding the domed portion; and

means for driving said piercing means along said radii of curvature and through the domed portion of the vent disc to form the plurality of perforations.

Add a17